Science, Service, Stewardship

Data for International Fisheries

External Review on Stock Assessment

May 19, 2014

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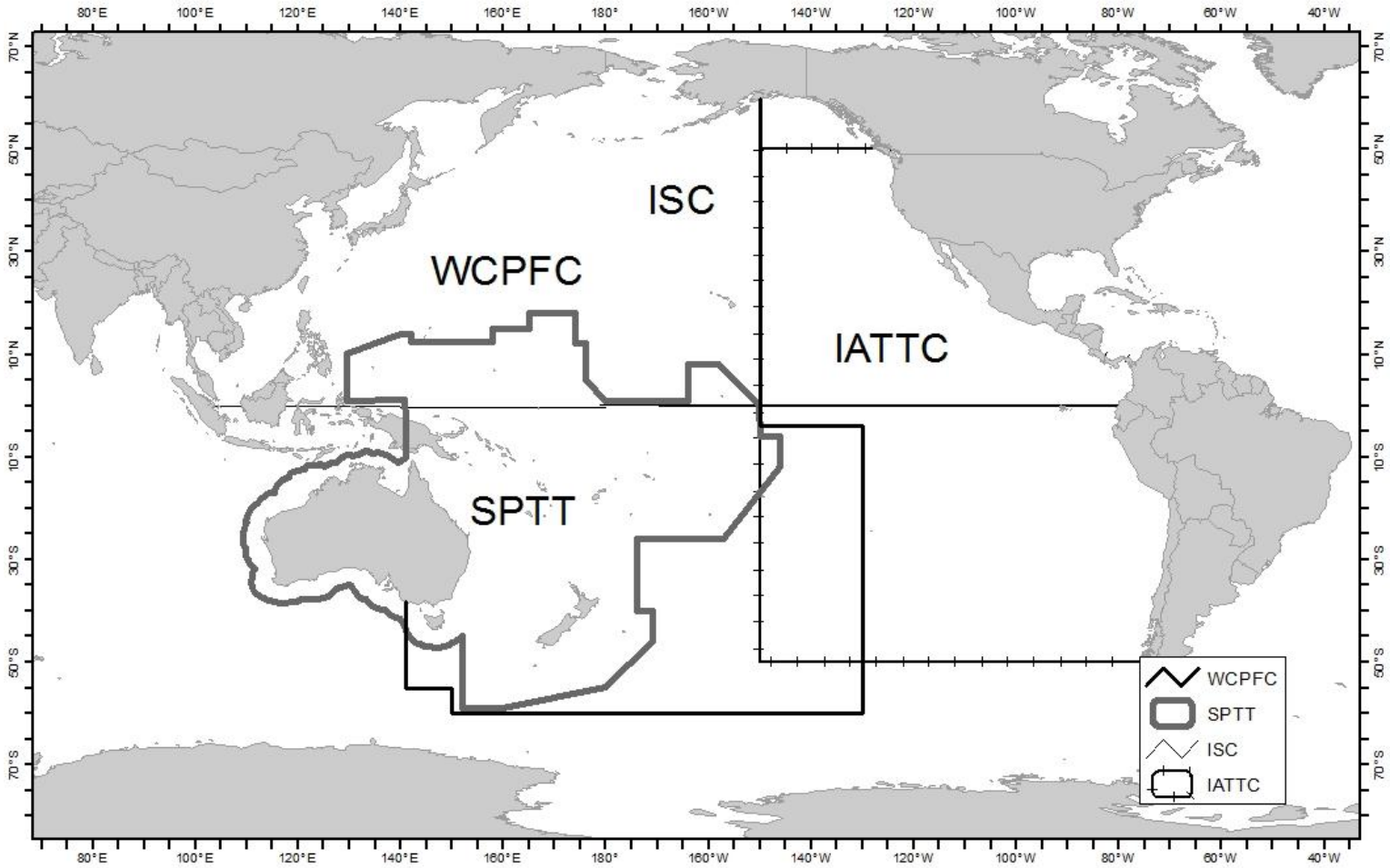
Tuna-RFMOs, ISC and South Pacific Tuna Treaty (SPTT)



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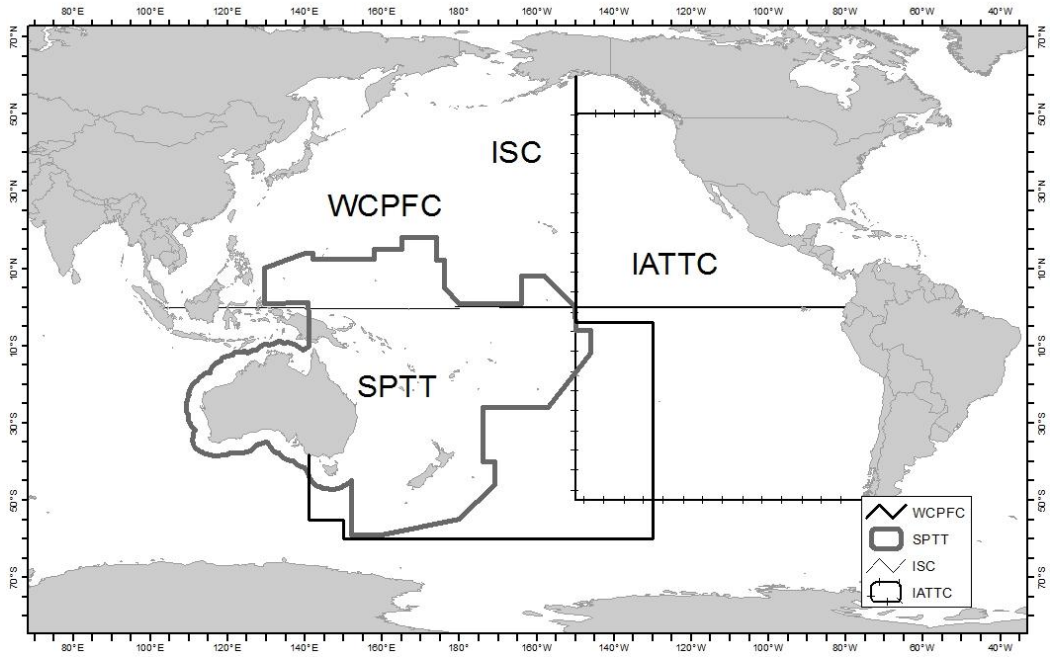
Participation in Tuna-RFMOs and the ISC

WCPFC – 26 cooperating members, 7 participating territories and 8 cooperating non-members

IATTC – 22 members and 2 cooperating non-members

ISC – 8 members

All organizations have 'observer' status



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How HMS assessments are conducted, different models among scientific bodies

WCPFC	IATTC	ISC
Limited (n=2) scientific staff	Large (>50) scientific staff	No scientific staff
Data management, shark research program and assessments are contracted to a Scientific Services Provider – Secretariat of the Pacific Community (SPC)	In-house data collection and databases, biology and ecosystem research, stock assessment and bycatch.	Life history and ecological research conducted by individual members. Assessments are conducted at workshops with members supplying indices.
2013 WCPFC Scientific Committee budget – $US 1,364,000	2013 IATTC Science budget – $US 5,242,000	2013 ISC Budget – $US 0

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US longline activity in two RFMOs

2012 Spatial distribution of longline effort

Largest US pelagic longline fishery

~45 million hooks deployed

Bigeye catch –

5,160 mt in WCPFC

862 mt in IATTC

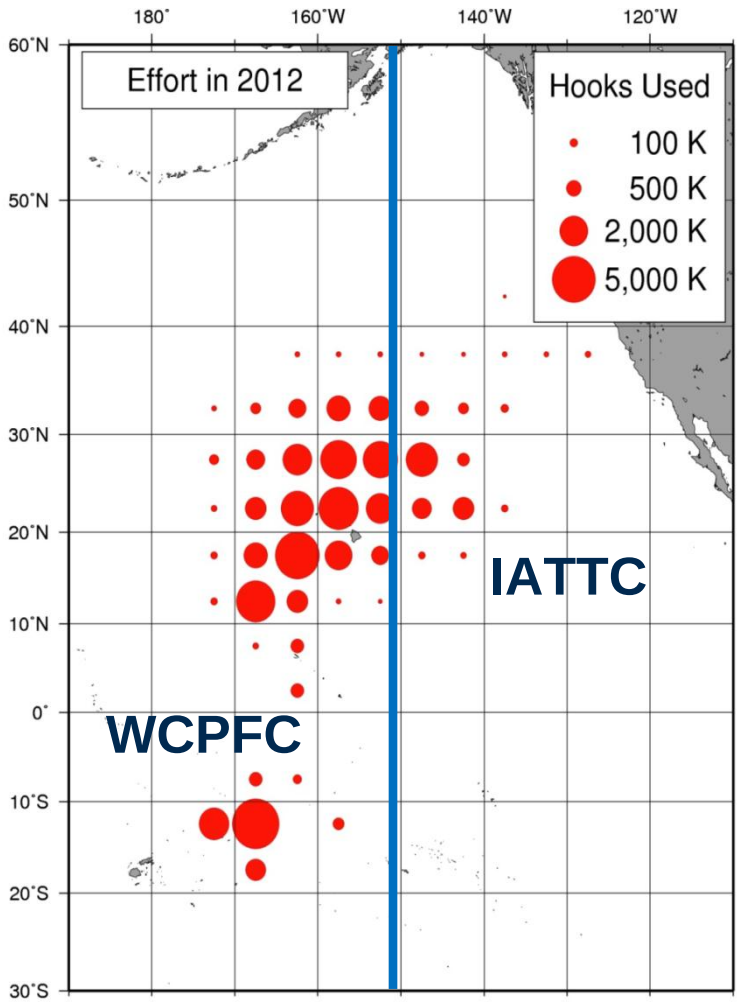
PIFSC responsibility

Federal logbooks (100% coverage)

Species composition from auction

Observer coverage – 100% shallow set

20% deep-set (Hawaii and A. Samoa)



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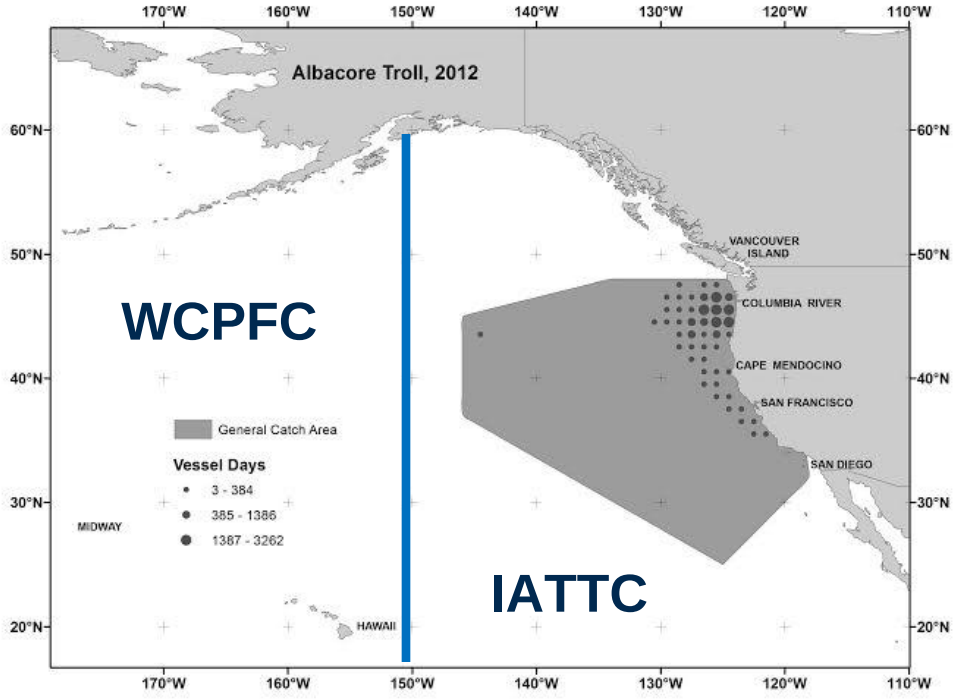
US troll activity in two RFMOs

SWFSC responsibility

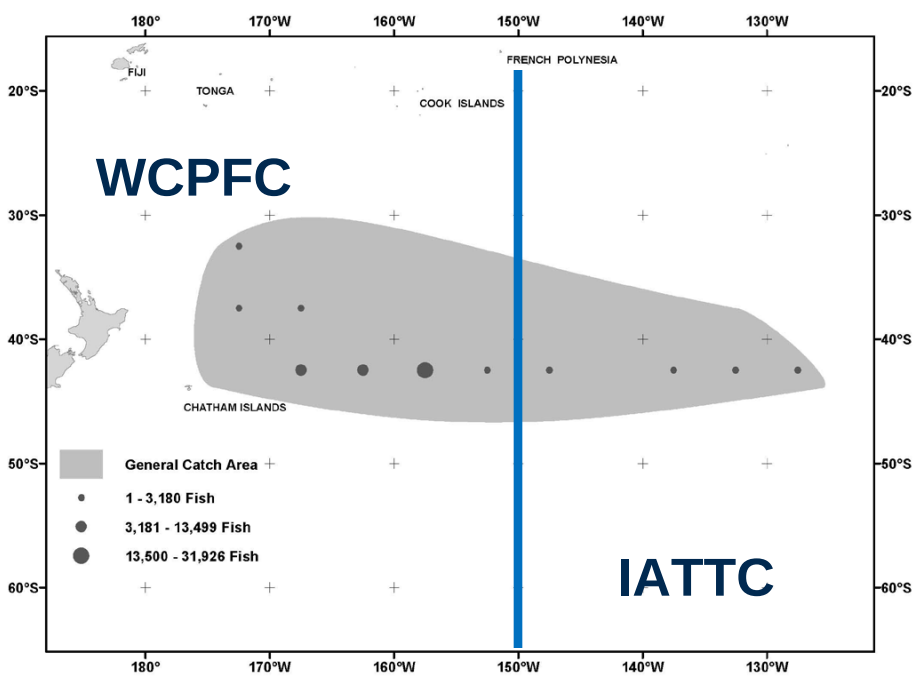
Logbook (100% coverage)

No observer coverage

North Pacific



South Pacific



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US purse seine activity in two RFMOs

2nd largest US purse seine fishery

SWFSC responsibility

Logbook (100% coverage)

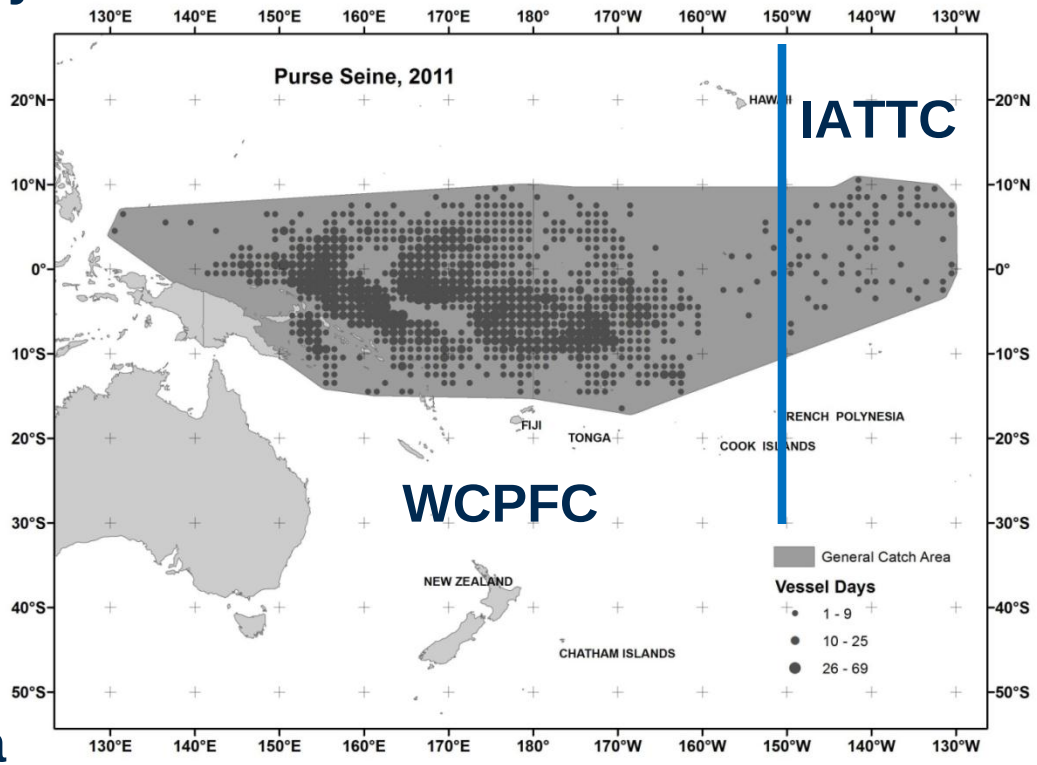
Data not processed since 2011

PIRO responsibility

A. Samoa cannery sampling for species composition

Data not processed since 2010

100% observer coverage (SPTT & WCPFC ROP) since 2010, data unavailable



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Data and Report Submissions

- **WCPFC – PIFSC is Data Correspondent**
  - Data submission is due April 30
  - National Report is due July 7
  - CAT1 – annual total catch by species and gear, total vessels
  - CAT2 – aggregated (1º or 5º – monthly) catch and effort
  - CAT3 – aggregated (5º – monthly) size frequency by species and gear
- **IATTC – SWFSC is Data Correspondent**
  - Data submission is due July 1
  - National Report is due July 1
- **ISC – SWFSC is Data Correspondent**
  - Data submission is due July 1
  - National Report is due July 1
  - Same format as WCPFC CAT submissions

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WCPFC Conservation and Managements Measure (CMM) Requirements

- **CMM 2005-03** – **Every 6 months** – North Pacific albacore, catch and effort summary tables.
- **CMM 2009-03** – **Annually** – South Pacific swordfish, total number of vessels that fished for swordfish south of 20ºS and the total catch of swordfish.
- **CMM 2010-01** – **Annually** – North Pacific striped marlin, measures applied to vessels to reduce their marlin catch.
- **CMM 2010-05** – **Annually** – South Pacific albacore, vessel numbers that fished south of 20ºS and the total catch of albacore.
- **CMM 2013-01** – **Monthly** – shall report monthly the amount of bigeye catch by its flagged vessels to the Secretariat by the end of the following month.

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WCPFC Conservation and Managements Measure (CMM) Requirements - Continued

- **CMM 2011-03** – **Annually in Part 1** – Any instances in which cetaceans have been encircled by purse seine nets of flagged vessels.
- **CMM 2011-04** – **Annually in Part 1** – number of releases of oceanic whitetip sharks including the status upon release (dead or alive).
- **CMM 2012-04** – **Annually in Part 1** – instances in which whale sharks have been encircled by the purse seine nets of flagged vessels.
- **CMM 2012-07** – **Annually in Part 1** – instances on interactions with seabirds reported or collected by observers, including mitigation used, observed and reported species specific seabird bycatch rates and numbers.

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WCPFC stock assessment structure and PIFSC indices

	Tuna and Billfish	Sharks
Time-step	Quarterly	Annual
Spatially disaggregated	Yes	No
CPUE indices	Nominal longline CPUE for bigeye and yellowfin. Nominal purse seine CPUE for skipjack, yellowfin and bigeye. Standardized CPUE for S Pacific albacore.	Standardized CPUE for HI longline Purse seine (SPTT observer data)
Size (length or weight data)	Port sampling for purse seine fishery, no data provided since 2010	Observer data
Tagging data	Skipjack, yellowfin and bigeye. Small amount from Hawaii Tuna Tagging Program (1990s)	None

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IATTC stock assessment structure and PIFSC indices

	Tuna and Billfish
Time-step	Quarterly
Spatially disaggregated	No
CPUE indices	Retained catch data are used in the bigeye, yellowfin, swordfish and striped marlin assessments No CPUE data are used.
Size (length or weight data)	None used
Tagging data	None exist

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ISC stock assessment structure and PIFSC indices

	Albacore	Billfish (swordfish, blue and striped marlin)
Time-step	Quarterly	Quarterly
Spatially disaggregated	No	No
CPUE indices	Nominal longline CPUE	Hawaii longline fishery - Standardized CPUE Nominal CPUE for A Samoa and troll/handline fisheries for blue marlin
Size (length or weight data)	Port and observer data	Port and observer data
Tagging data	None used	None exist

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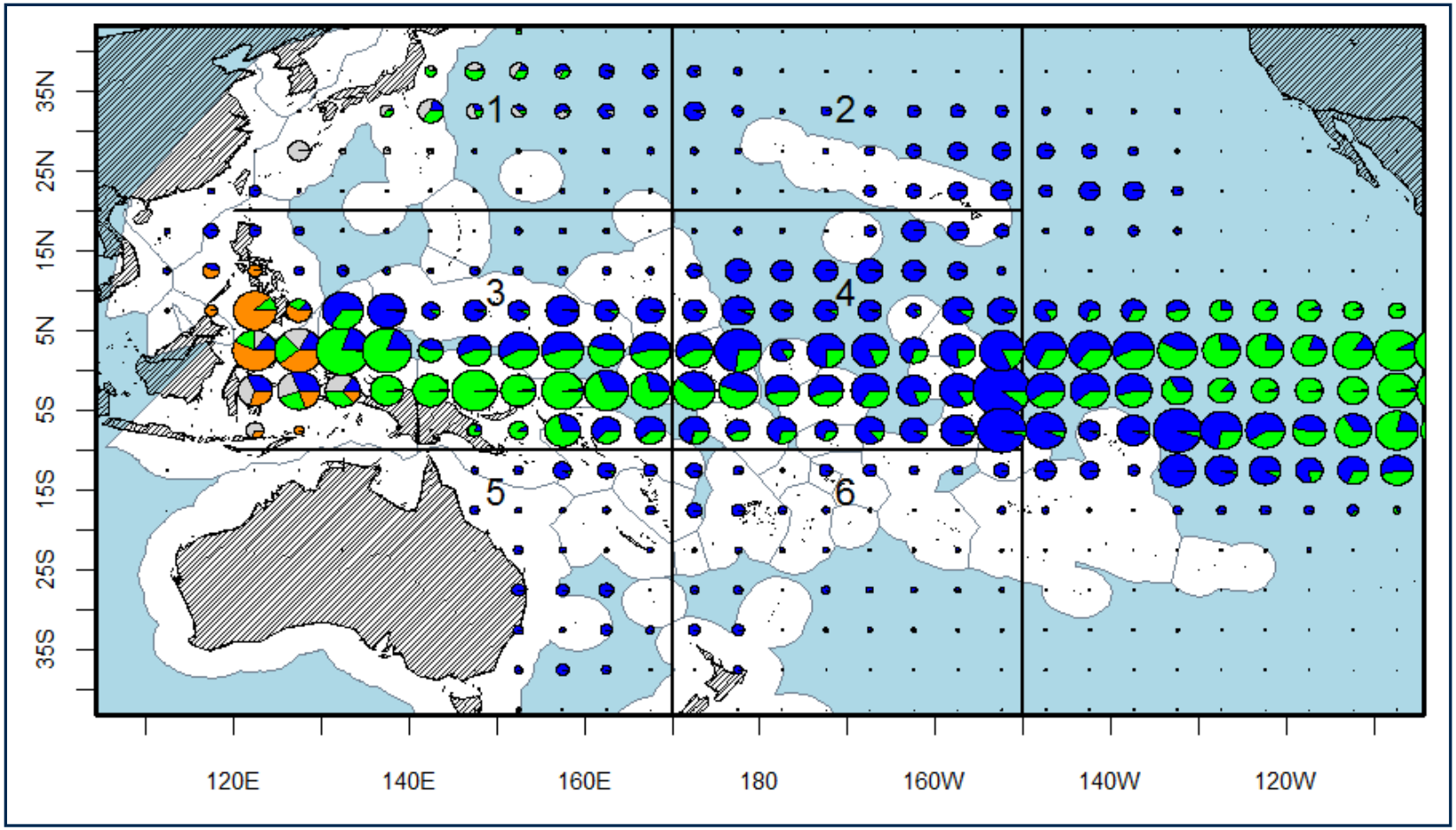
Data gaps in WCPFC Bigeye tuna assessment – longline catch and species composition



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Data gaps in WCPFC Bigeye tuna assessment – longline catch and species composition

USA problem – NO for longline fisheries

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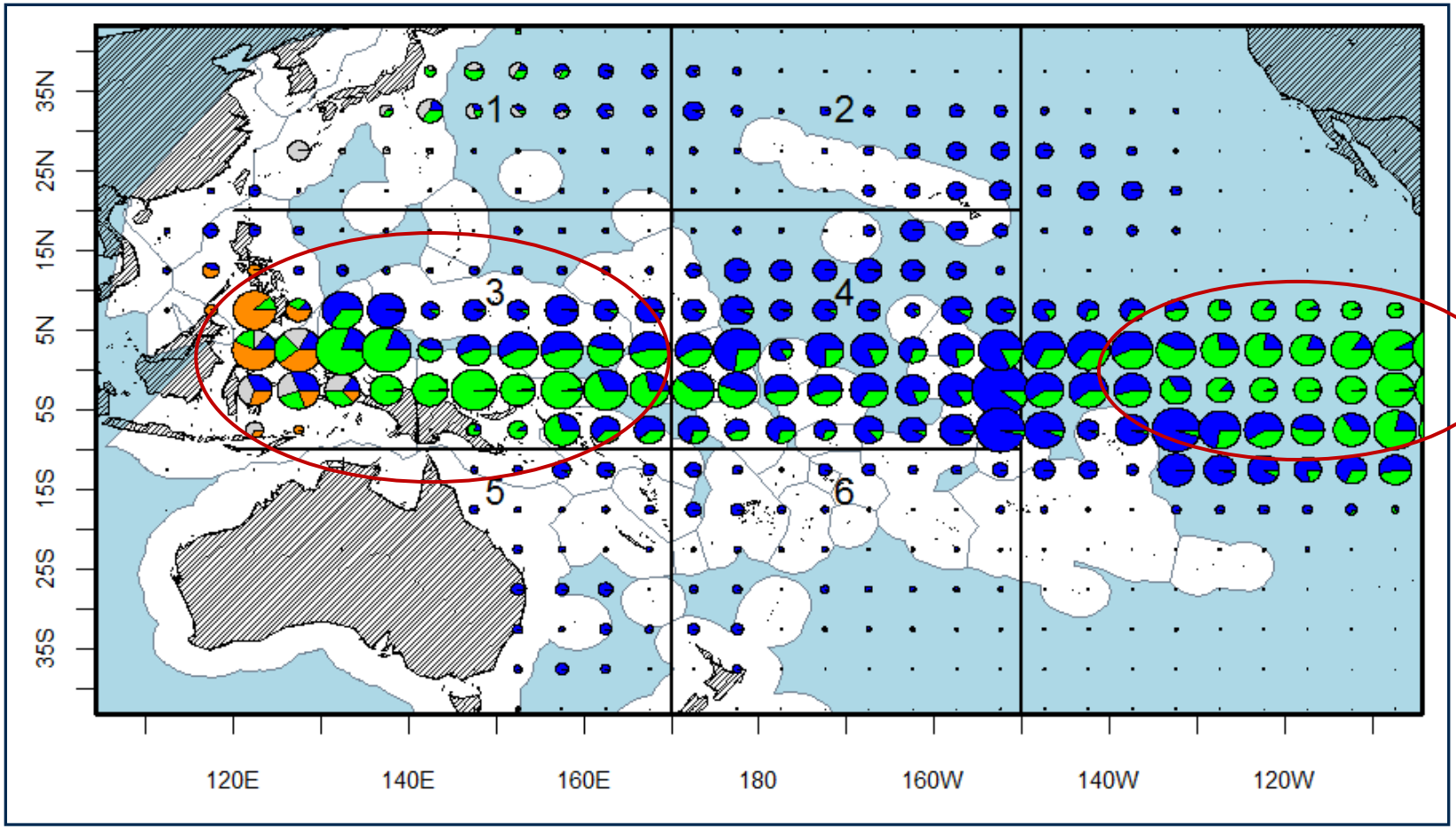
Data gaps in WCPFC Bigeye tuna assessment – purse seine catch and species composition



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Data gaps in WCPFC Bigeye tuna assessment – purse seine catch and species composition

USA problem – Yes for purse seine fishery

Species	USA estimate (RPLs) No port sampling correction	SPC estimate (RPLs and limited observer species composition)
Bigeye	**3,373 mt**	**10,466 mt**
Yellowfin	23,212 mt	26,047 mt
Skipjack	176,654 mt	166,726 mt
Total	203,239 mt	203,239 mt

Species composition is poorly estimated but is important in the skipjack, yellowfin and bigeye tuna assessments.

Requires additional data management and research using logsheet (RPLs), unloadings (ULs, FOTs), observer (100% coverage), spill sampling and port sampling.

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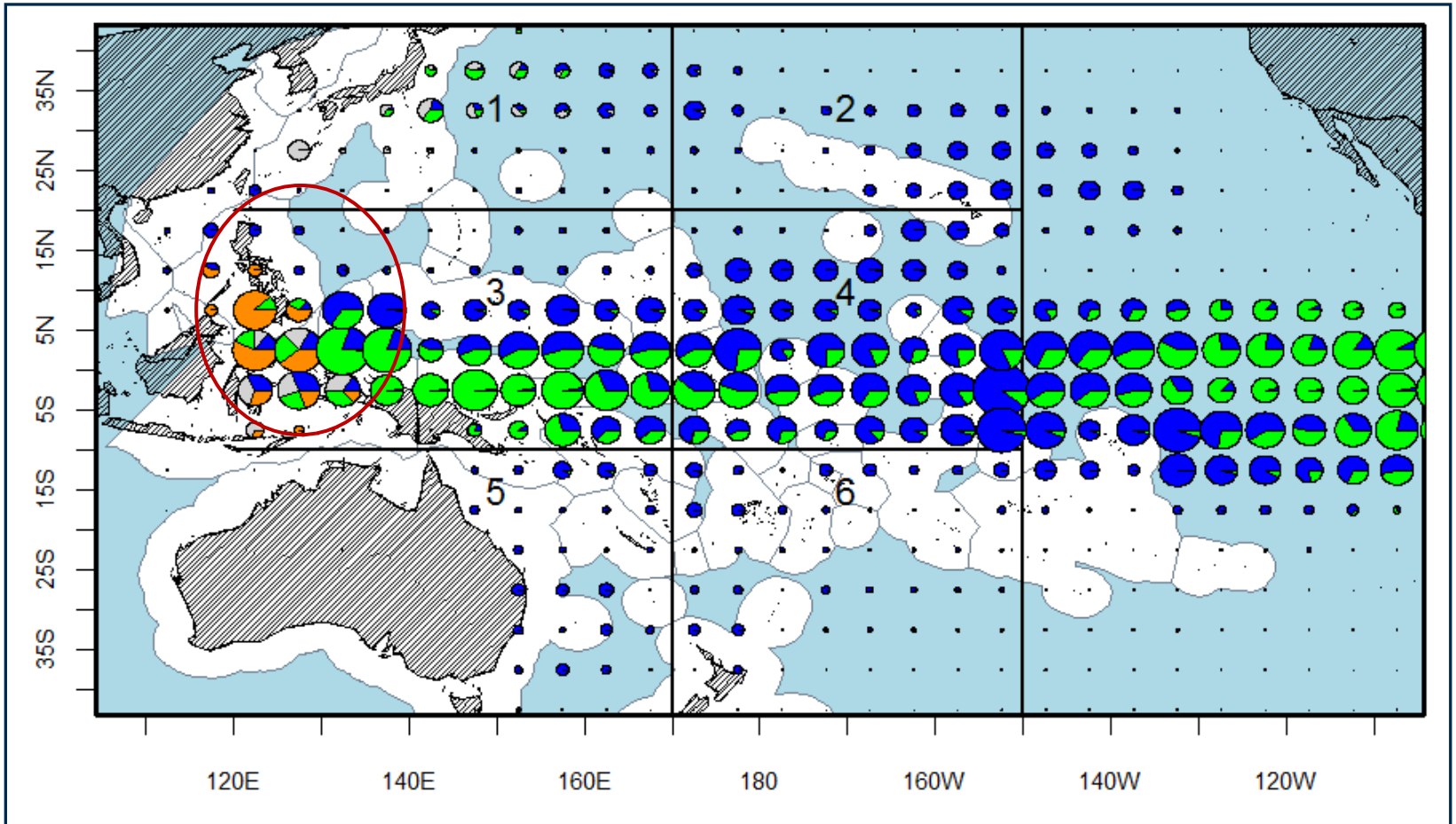
Data gaps in WCPFC Bigeye tuna assessment – other fisheries catch and species composition



Species composition in Indonesia, Philippines & Vietnam

Photo: A. D. Lewis

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Data gaps in WCPFC Bigeye tuna assessment – Longline indices

USA problem – NO for longline fisheries

	Countries complying	Non-compliance
Mandatory submission of operational longline data	AU, NZ, Pacific Islands and USA (2007-present)	China, Japan, Korea and Taiwan

Potentially biased standardized CPUE indices within GLM framework due to:

1) Constructing on large spatial scales (5º – month data);

2) Inability to include vessel effects and quantify catchability

3) Inability to include environmental covariates because of large spatial scales.

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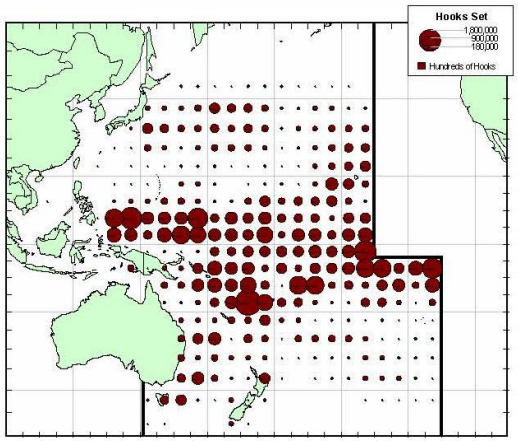
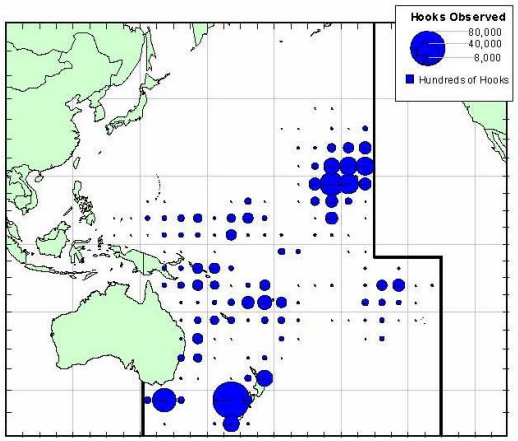
Data gaps in WCPFC Bigeye tuna assessment – observer data

100% observer coverage in WCPFC purse seine fishery

Sounds good; however, significant time lags

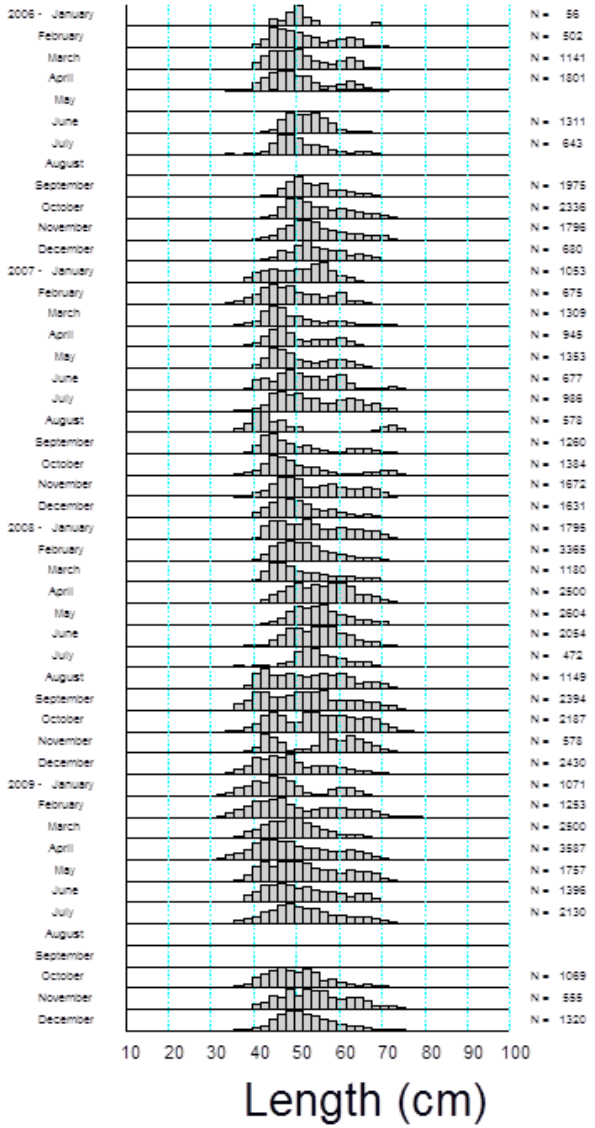
	Countries complying	Non-compliance
Longline observer data – sharks, other species not accurately recorded on logbooks	5% mandatory coverage as of 30 June 2012. AU, NZ and USA	China, Japan, Korea, Taiwan, EU and some Pacific Island countries





US purse seine size sampling in A. Samoa is influential in skipjack, yellowfin and bigeye tuna assessments.

Skipjack



No data processed since 2010

Bigeye